NEW HAMPSHIRE WATER SUPPLY AND POLLUTION CONTROL COMMISSION

LAKE TROPHIC DATA

MORPHOMETRIC:

| | | | |
|---|---|---|---|
| LAKE | Pisgah Reservoir | LAKE AREA (HA) | 25.78 |
| TOWN | Winchester | MAXIMUM DEPTH (M) | 7.3 |
| COUNTY | Cheshire | MEAN DEPTH (M) | 1.8 |
| RIVER BASIN | Connecticut | VOLUME ($M^3$) | 459,500 |
| LATITUDE | 42°49'N | MUD SURFACE AREA (HA) | 25.79 |
| LONGITUDE | 72°27'W | RELATIVE DEPTH | 1.3 |
| ELEVATION (FT) | 878 | SHORE CONFIGURATION | 4.11 |
| SHORE LENGTH (M) | 7400 | AREAL WATER LOAD (M/YR) | 7.88 |
| WATERSHED AREA (HA) | 422.1 | FLUSHING RATE ($YR^{-1}$) | 4.4 |
| % WATERSHED PONDED | 0 | PHOSPHORUS RETENTION COEFF. | 0.58 |

| BIOLOGICAL: | DATE | 20 JUL 1982 |
|---|---|---|
| DOM. PHYTOPLANKTON (% total) 1 | | Dinobryon (55%) |
| 2 | | Chrysosphaerella (30%) |
| NUMBER OF ALGAL GENERA | | 9 |
| TOTAL ALGAL COUNTS (cells/ml) | | |
| CHLOROPHYLL a (µg/L) | | 7.14 |
| DOM. ZOOPLANKTON (% total) 1 | | Nauplius larvae (30%) |
| 2 | | Keratella (30%) |
| ROTIFERS/LITER | | 57 |
| MICROCRUSTACEA/LITER | | 73 |
| TOTAL ZOOPLANK. CNTS (cells/L) | | 132 |
| VASCULAR PLANT ABUNDANCE | | Common |
| DOMINANT VASCULAR PLANTS 1 | | Brasenia |
| 2 | | Sparganium |
| 3 | | Nymphaea |
| SECCHI DISK TRANSPARENCY (M) | | 3.3 |
| BOTTOM DISS. OXYGEN (mg/L) | | 0.3 |
| SEDIMENT: % ORGANIC MATTER | | |

LAKE TYPE: An artificial pond.

SUMMER THERMAL STRATIFICATION: YES X NO ____ WEAK ____

IF YES, VOLUME OF HYPOLIMNION 0 ($m^3$) THERMOCLINE DEPTH 4.1 (m)

| CHEMICAL: (mg/L unless indicated otherwise) | LAKE: Pisgah Reservoir | | | | |
|---|---|---|---|---|---|
| | WINTER | | SUMMER | | |
| DATE DATE | | | 20 JUL 1982 | | |
| DEPTH (M) | | | 1.5 | 4.5 | 6.0 |
| pH (UNITS) | | | 4.4 | 4.7 | 4.8 |
| ALKALINITY | | | 0 | 0.6 | 0.9 |
| TOTAL KJELDAHL NITROGEN | | | 0.30 | 0.26 | 0.42 |
| NITRITE+NITRATE NITROGEN | | | < 0.05 | < 0.05 | < 0.05 |
| DISSOLVED ORTHOPHOSPHATE | | | 0.001 | 0.002 | 0.003 |
| TOTAL PHOSPHORUS | | | 0.010 | 0.012 | 0.023 |
| SPEC. CONDUCT. (μMhos/cm) | | | 24.2 | 20.8 | 23.5 |
| APPARENT COLOR (UNITS) | | | 20 | 20 | 45 |
| TURBIDITY (NTU) | | | 1.5 | 1.3 | 1.8 |
| MAGNESIUM | | | 0.31 | | |
| CALCIUM | | | 1.2 | | |
| SODIUM | | | 18 | | |
| POTASSIUM | | | 0.1 | | |
| CHLORIDE | | | < 2 | < 2 | < 2 |
| TN : TP | | | 30 | 22 | 18 |
| INORG-N : INORG-P | | | | | |
| [Mg+Ca] : [Na+K] | | | 0.08 | | |
| CALCITE SATURATION INDEX | | | | | |

* = NOT DEFENSIBLE NR = NO RESULT

TROPHIC CLASSIFICATION: 1982

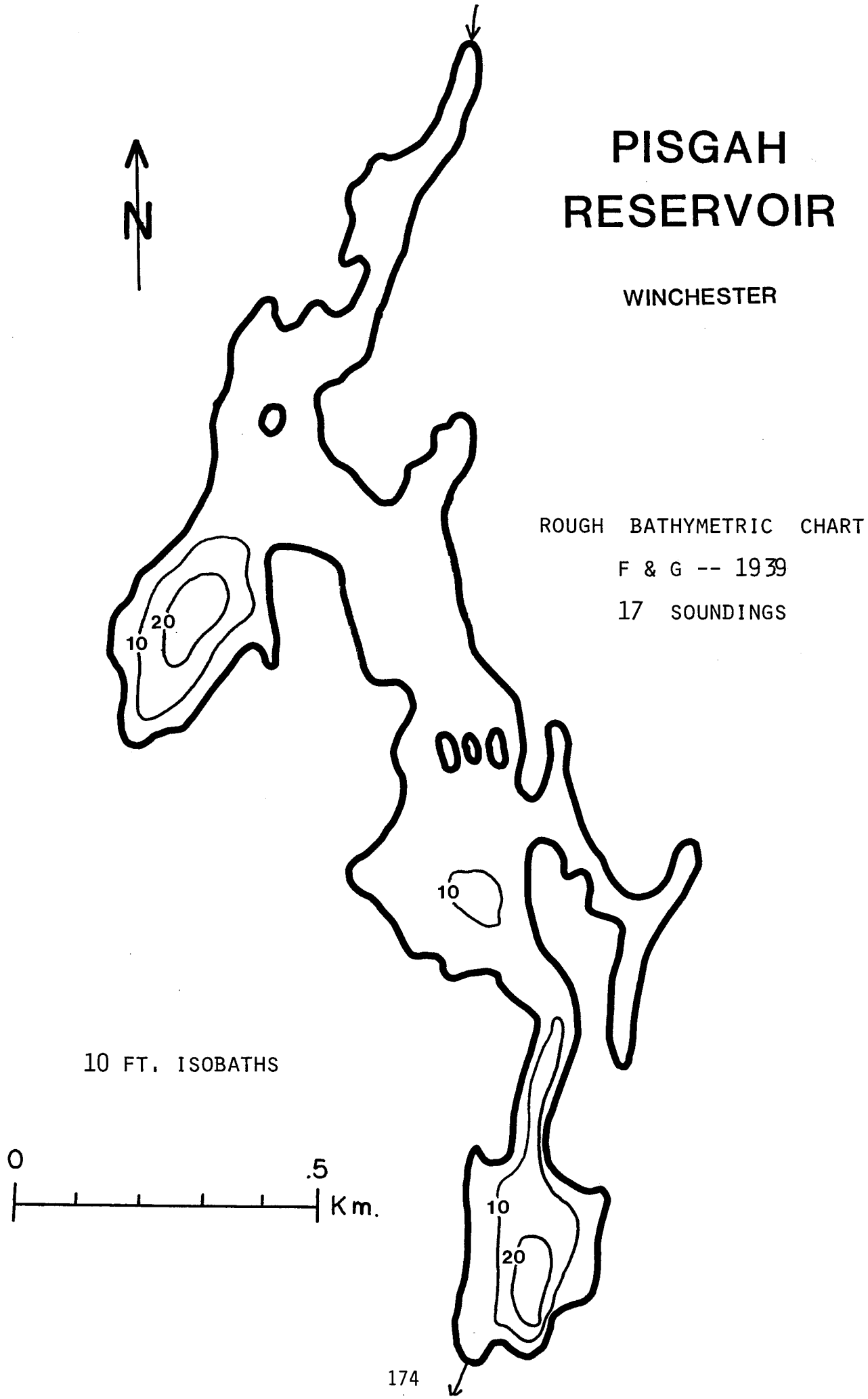
| | D.O. | S.D. | PLANT ABUND. | CHL a | TOTAL PTS. | TROPHIC CLASS. |
|---|---|---|---|---|---|---|
| CLASSIFICATION POINTS: | 5 | 2 | 2 | 1 | 10 | MESO. |

COMMENTS:

1. This man-made reservoir is managed as a wilderness area by the State Division of Parks and Recreation. Motor boats are not allowed, and access to the pond is by foot only, unless permission is granted. The road to the reservoir is very rough.

2. The reservoir was inaccessible during the winter and was not sampled at that time.

3. The reservoir had extremely low pH and alkalinity values. No calcite saturation index could be calculated because of the zero alkalinity in the epilimnion. Assuming an alkalinity of 0.1, the calcite saturation index was 7.8.


PISGAH
RESERVOIR
WINCHESTER
N
ROUGH BATHYMETRIC CHART
F & G -- 1939
17 SOUNDINGS
10
20
10
10
10 FT. ISOBATHS
0
.5
Km.
10
20

FIELD DATA SHEET

WATER BODY Pisgah Reservoir TOWN Winchester BY WSPCC

DATE COLLECTED 20 JULY 1982 WEATHER Rain

| STATION | DEPTH (M) | TEMP. (°C) | *DISSOLVED OXYGEN | OXYGEN: % SATURATION | | | |
|---|---|---|---|---|---|---|---|
| Deep Spot | 0.0 | 27.0 | 8.6 | 108% | | | |
| | 1.0 | 27.0 | 8.6 | | | | |
| | 2.0 | 26.7 | 8.7 | | | | |
| | 3.0 | 24.8 | 9.0 | 108% | | | |
| | 4.0 | 20.8 | 9.5 | | | | |
| | 5.0 | 15.9 | 3.2 | | | | |
| | 6.0 | 12.7 | 0.3 | 3% | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |

SECCHI DISK (M) 3.3

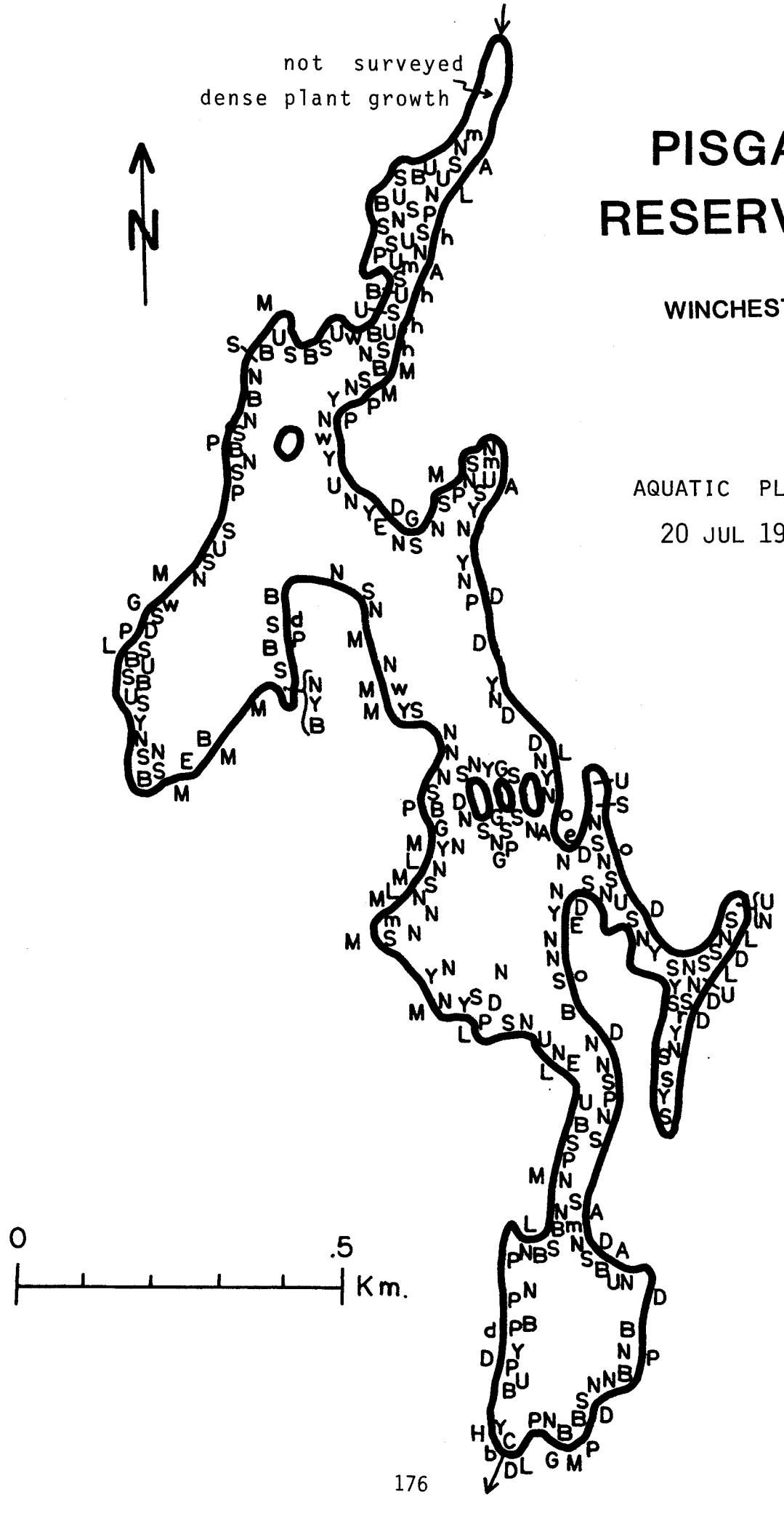
BOTTOM DEPTH (M) 6.3

TIME 1325

COMMENTS:

1. Steady rain while sampling.

* Dissolved oxygen values in mg/L




# PISGAH RESERVOIR

WINCHESTER

AQUATIC PLANTS

20 JUL 1982

# AQUATIC PLANT SURVEY

LAKE Pisgah Reservoir TOWN Winchester DATE 20 JUL 1982 BY WSPCC

| Key | PLANT NAME | | ABUNDANCE |
|---|---|---|---|
| | GENERIC | COMMON | |
| B | Brasenia schreberi | Water Shield | Abundant |
| G | Gramineae | Grass Family | Scattered |
| P | Pontederia cordata | Pickerelweed | Common |
| M | Myrica gale | Sweet Gale | Common |
| N | Nymphaea | White Water Lily | Abundant |
| H | Hypericum | St. John's-wort | Scattered |
| b | Scirpus | Bulrush | Scattered |
| Y | Nuphar | Yellow Water Lily | Common |
| C | Carex | Sedge | Scattered |
| L | Lysimachia | Swamp Candle | Common |
| D | Dulichium arundinaceum | Three-way Sedge | Scattered |
| U | Utricularia | Bladderwort | Common |
| d | Decodon verticillatus | Swamp Loosestrife | Sparse |
| S | Sparganium | Bur Reed | Abundant |
| w | Potamogeton | Pondweed | Sparse |
| m | Myriophyllum humile | Water Milfoil | Sparse |
| o | Cephalanthus occidentalis | Buttonbush | Sparse |
| e | Eleocharis | Spike Rush | Sparse |
| E | Eriocaulon septangulare | Pipewort | Sparse |
| A | Sagittaria | Arrowhead | Sparse |
| h | Vaccinium corymbosum | High-bush Blueberry | Scattered |
| r | Drosera | Sundew | Sparse |

OVERALL ABUNDANCE Common

GENERAL OBSERVATIONS:

1. Plants were common along the entire shoreline, and abundant in the northern end.

2. There was much variety with many different plants located in most areas. The plants were generally not in dense stands however, and did not interfere with boating, except at the northern end.

3. Plant survey was conducted during a steady rain; many more submerged plants were probably present.